



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/697,021

10/31/2003

Atsushi Yonetani

12577/22

1100

7590

04/20/2006

KENYON & KENYON

Suite 700

1500 K Street, N.W.

Washington, DC 20005

EXAMINER

NGUYEN, SANG H

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/697,021

Applicant(s)

YONETANI ET AL.

Examiner

Sang Nguyen

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 1-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15, 16 and 18 is/are rejected.
- 7) ☒ Claim(s) 17 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election of Group III (claim 15-19) in the reply filed on 03/14/06 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03 (a)).

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Oath/Declaration***

The Oath/declaration filed on 05/04/04 is acceptable.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 15-16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art of Present Invention (figure 1) in view of Aono (U.S. Patent No. 6,674,574).**

**Regarding claim 15;** PAPI discloses a microscope apparatus comprising:

a microscope (11 of figure 1) and an first optical element (24 of figure 1, i.e., a prism box for focusing or calculating the mount of exposure a shutter [25 of figure 1]) for

receiving incident from the microscope (11 of figure 1), and an electronic image sensor (18 of figure 1) receiving the light transmitted through the first optical element (24 of figure 1). See figure 1.

PAPI discloses all of features of claimed invention except for the optical element having a preset transmittance with respect to light in a pre-set wavelength region. However, Aono teaches that it is known in the art to provide Focusing system for a microscope comprising the optical element (i.e., a filter [7', 21' of figure 1], an analyzer [25 of figure 1], and a splitter [23 of figure 1]) having a preset transmittance (B, D of figure 2) with respect to light in a pre-set wavelength region (U of figure 2 and col.5 lines 1-35). See figures 1-19.

U.S. Patent Jan. 6, 2004 Sheet 1 of 16 US 6,674,574 B1

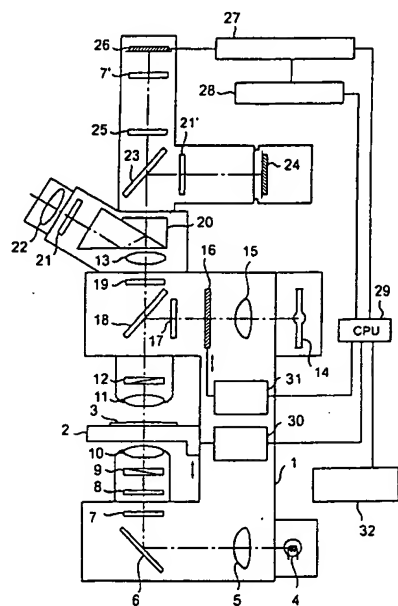


Fig. 1

U.S. Patent Jan. 6, 2004 Sheet 2 of 16 US 6,674,574 B1

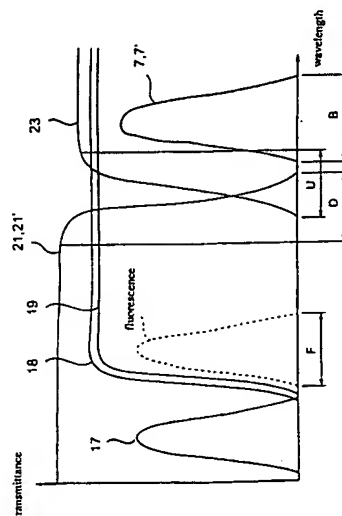


Fig. 2

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine microscope apparatus of PAPI with the optical element having a preset transmittance with respect to light in a pre-set wavelength region as taught by Aono for the purpose of focusing accurately transmitted differential interference image and the fluorescence are separated entirely.

**Regarding claim 16;** PAPI in view of Aono discloses all of features of claimed invention except for the first optical element has a transmittance of  $50 \pm 10\%$  or less. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine microscope apparatus of PAPI with the first optical element has a transmittance of  $50 \pm 10\%$  or less, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

**Regarding claim 18;** PAPI discloses all of features of claimed invention except for the first optical element and the second optical element. However, Aono teaches of the first optical element (7 of figure 1) and a second element (23 of figure 1). PAPI in view of Aono discloses all of features of claimed invention except for the first optical element and the second optical element having a transmittance of 50 % or less with respect to light in a wavelength range from 700 to 900 nm, of light incident from the microscope. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine microscope apparatus of PAPI with the first optical element and the second optical element having a transmittance of 50 % or less with respect to light in a wavelength range from 700 to 900 nm, of light incident from the

microscope, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

***Allowable Subject Matter***

**Claims 17 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

The prior art of record, taken alone or in combination, fails discloses or render obvious apparatus comprising all the specific elements with the specific combination including of the first optical element is placed so that a coated surface of the first optical element satisfies the following condition:  $2 \times L_1 \times \tan 2\theta + L_1 \times \tan 4\theta \geq L_2 / 2$ , where  $L_1$  is a distance extending along an optical axis from the coated surface of the first optical element to a light-receiving surface of the electronic image sensor,  $L_2$  is a length of a minor side of an effective imaging area in a light-receiving section of the electronic image sensor, and  $\theta$  is an angle made by a reference axis with the coated surface of the first optical element, where a direction perpendicular to the optical axis is assumed as the reference axis in set forth of claim 17.

The prior art of record, taken alone or in combination, fails discloses or render obvious apparatus comprising all the specific elements with the specific combination including of one of the first optical element and the second optical element, closer to the microscope, is placed to satisfy the following condition:  $2 \times L_1 \times \tan 2\theta + L_1 \times \tan 4\theta \geq$

Art Unit: 2877

$L_2/2$ ; where  $L_1$  is a distance extending along an optical axis from a surface, situated on an opposite side of the microscope, of the optical element closer to the microscope to a light-receiving surface of the microscope,  $L_2$  is a length of a minor side of an effective imaging area in a light-receiving section of the microscope, and  $\theta$  is an angle made by a reference axis with the surface, situated on an opposite side of the microscope, of the optical element closer to the microscope, where a direction perpendicular to the optical axis is assumed as the reference axis in set forth of claim 19.

### Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Aizaki et al (6917377) discloses microscope system; Hayashi (6608314) discloses method and apparatus for observation using quantum dots; Kanoa et al (6594075) discloses microscope with electronic image sensor; Yonetani et al (6496308) discloses relay optical system; Watanabe et al (6384967) discloses illumination apparatus for a microscope; Kapitza (5896224) discloses confocal microscope with diaphragm disc; Kawasaki (5710663) discloses reflecting fluorescence microscope; Kawasaki et al (4643540) discloses microscope provided with an automated controlled illumination system; or Nakamura (4013347) discloses movable filter optical system.

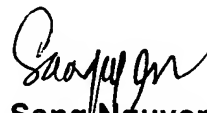
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Nguyen whose telephone number is (571) 272-2425. The examiner can normally be reached on 9:30 am to 7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 14, 2006

SN

  
**Sang Nguyen**  
**Patent Examiner**  
**Art Unit 2877**